

**ATTORNEY DOCKET NO.: 728-240 (YOR920030456US)**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

**APPLICANT(S):** Dakshi AGRAWAL et al.

**GROUP ART UNIT:** 2145

**APPLICATION NO.:** 10/713,306

**EXAMINER:** GOODCHILD, William J.

**FILING DATE:** November 14, 2003

**DATED:** May 7, 2008

**FOR:           METHOD AND APPARATUS TO ESTIMATE  
CLIENT PERCEIVED RESPONSE TIME**

Mail Stop Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPELLANTS BRIEF ON APPEAL**

**REAL PARTY IN INTEREST**

The real party in interest is International Business Machines Corporation, the assignee of the subject application, having an office at New Orchard Road, Armonk, New York 10504.

**RELATED APPEALS AND INTERFERENCES**

To the best of Appellants' knowledge and belief, there are no currently pending related appeals, interferences or judicial proceedings.

### STATUS OF CLAIMS

Original Claims 1-13 were filed on November 14, 2003. Claims 1, 4, 8, 12 and 13 were amended in a Response filed October 9, 2007. Thus, Claims 1-13 are pending in the Appeal. Claims 1, 4, 12 and 13 are in independent form. Claim 11 has been found to contain allowable subject matter. For the purposes of this appeal: Claims 1-3 stand or fall together; Claims 4-10 stand or fall together; Claim 12 stands or falls alone; and Claim 13 stands or falls alone.

### STATUS OF AMENDMENTS

All amendments filed to date have been entered. Thus, the Appendix to this Appeal Brief includes Claims 1-13, of which the status of Claims 1, 4, 8, 12 and 13 is indicated as “Previously Presented”, and the status of Claims 2, 3, 5-7 and 9-11 is indicated as “Original”.

### SUMMARY OF CLAIMED SUBJECT MATTER

The invention recited in Claim 1 relates to a method of computing response time of a web server. The method includes placing a plurality of correlation tags in data at networking and application layers, wherein said tags allow for later identification of said data (Specification at page 6, lines 22-24)<sup>1</sup>. The method further includes collecting said data from said layers, the data corresponds to a single event (Specification at page 6, lines 24-28). The method still further includes combining said data from said networking and application layers into a metric, the data corresponding to a single web event is identified (Specification at page 6, lines 24-28). The method also includes calculating client perceived response time (Specification at page 6, lines 28-30).

The invention recited in Claim 4 relates to a method of estimating of a perceived response time of at least one web server computing device to one or more client computing devices connected to the at least one web server device via a network. The method includes generating and placing a session identifier (ID) as a correlation tag in each of a plurality of

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<sup>1</sup> Although a citation for each feature of the claims is provided herein, Appellants note that support may be found elsewhere in the written description.

requests sent by a client to a web server device, the correlation tags identify said requests (Specification at page 9, lines 24-26; FIG. 3a). The method further includes generating and placing a connection identifier (ID) as a correlation tag in each communication packet sent between the client and the web server device (Specification at page 8, lines 21-23; FIG. 2a). The method still further includes combining said plurality of requests and said communication packets into a metric, each request and communication packet corresponding to a single event is identified (Specification at page 10, lines 7-11; FIG. 4). The method also includes estimating client perceived response time of said at least one web server computing device to a request by said one or more client computing devices connected to the web server device via a network (Specification at page 10, lines 7-11; FIG. 4).

The invention recited in Claim 12 relates to an apparatus for estimating a perceived client response time of at least one web server computing device to one or more client computing devices connected to the at least one web server via a network. The apparatus includes a means for generating and placing a session identifier (ID) as a correlation tag in each of a plurality of requests sent by the one or more client computing devices to the at least one web server, the correlation tags identify said requests (Specification at page 7, lines 2-15). The apparatus further includes a means for generating and placing a connection identifier (ID) as a correlation tag in each communication packet sent between the one or more client computing devices and the at least one web server (Specification at page 7, lines 2-15). The apparatus still further includes a means for combining said plurality of requests and said communication packets into a metric, each request and communication packet corresponding to a single event is identified (Specification at page 6, lines 21-34; FIG. 1). The apparatus also includes a means for estimating the perceived client response time of the at least one web server computing device to a request by the one or more client computing devices connected to the web server via the network (Specification at page 6, lines 23-27; FIG. 1).

The invention recited in Claim 13 relates to a computer program device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for an apparatus for estimating a perceived client response time of at least one web server computing device to one or more client computing devices connected to the at least one web server via a network. The computer program device includes a means for generating and

placing a session identifier (ID) as a correlation tag in each of a plurality of requests sent by the one or more client computing devices to the at least one web server, the correlation tags identify said requests (Specification at page 7, lines 2-15). The computer program device further includes a means for generating and placing a connection identifier (ID) as a correlation tag in each communication packet sent between the one or more client computing devices and the at least one web server (Specification at page 7, lines 2-15). The computer program device still further includes a means for combining said plurality of requests and said communication packets into a metric, wherein said each request and communication packet corresponding to a single event is identified (Specification at page 6, lines 21-23; FIG. 1). The computer program device also includes a means for estimating the perceived client response time of the at least one web server computing device to a request by the one or more client computing devices connected to the web server via the network (Specification at page 6, lines 23-27; FIG. 1).

#### GROUND FOR REJECTION TO BE REVIEWED ON APPEAL

Whether Claims 1-10, 12 and 13, rejected under 35 U.S.C. §102(e), are anticipated by U.S. Publication 2003/0065986 (Fraenkel).

#### ARGUMENT

Claims 1-10, 12 and 13 were rejected under 35 U.S.C. §102(e) as being anticipated by Fraenkel.

##### 1. Independent Claim 1 is patentable over Fraenkel

Independent Claim 1 was said to be anticipated by Fraenkel.<sup>2</sup>

Claim 1 recites a method of computing response time of a web server. The method includes placing a plurality of correlation tags in data at networking and application layers, wherein said tags allow for later identification of said data. The method further includes collecting said data from said layers, the data corresponds to a single event. The method still

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<sup>2</sup> See Office Action dated December 20, 2007, at page 2, paragraph no. 3.

further includes combining said data from said networking and application layers into a metric, the data corresponding to a single web event is identified. The method also includes calculating client perceived response time.

Fraenkel discloses a root cause analysis of server system performance degradations.<sup>3</sup>

#### 1A. Fraenkel cannot anticipate Claim 1

Claim 1 of the present application relates to a web server side mechanism for measuring the response time of the web server, as perceived by multiple remote clients. The claim relates to measuring/estimating the response time, as perceived by the remote clients, using only server side latency measurements. Further, the claim relates to measuring/estimating the response time of a page download, which can consist of a container page and a set of embedded objects, obtained over multiple simultaneous TCP/IP connections, which is achieved using only server side mechanisms. The claim also relates to using tagging mechanisms to aid in correlating application level latencies with TCP/IP network level latencies.

Claim 1 of the present application recites placing a plurality of correlation tags in data at networking and application layers used to identify the data. Claim 1 of the present application recites combining said data from networking and application layers into a metric, wherein said data corresponding to a single web event is identified. Claim 1 of the present application combines both the application layer information and the networking layer information, which provides for a more comprehensive analysis. Claim 1 of the present application uses the correlation tags to identify a single web event. The single web event data that is identified is then used by the metric to generate comprehensive and real time user perceived response times that correspond to the single web event.

Fraenkel discloses a root cause analysis of server system performance degradations. The system disclosed by Fraenkel is a mechanism for measuring the transaction response time at a set of remote monitoring agents;<sup>4</sup> the remote monitoring agents are not actual clients.<sup>5</sup> Fraenkel determines root cause analysis from latency measurements collected by remote monitoring

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<sup>3</sup> See Fraenkel, at title and abstract.

<sup>4</sup> See Fraenkel, at Abstract, FIG. 1 and paragraph [0073].

<sup>5</sup> See Fraenkel, at paragraph [0073].

agents and server side utilization measurements.<sup>6</sup> Fraenkel does not teach or disclose page view response time, embedded objects, or simultaneous TCP connections; Fraenkel only discloses transaction response time. Fraenkel does not teach or disclose tagging, at either the systems/network level or application level.

Claim 1 recites a method of computing response time of a web server. The measurements of the invention of Claim 1 are based only upon server side measurements; that is the data is tagged, and the web server collects the tagged data. Fraenkel uses measurements performed at an agent side.<sup>7</sup> Server side measurements are not and cannot be equated with agent side measurements.

In addition, Claim 1 of the present application measures response time for actual clients; Fraenkel measures response time for monitoring agents.<sup>8</sup> By placing correlation tags in data at both networking and application layers, and collecting and combining the data using the correlation tags to identify a single web event, a client perceived response time can then be calculated. The correlation tags of Claim 1 are sent directly between the client and server; in Fraenkel, the data is transmitted between an agent and a server.<sup>9</sup>

Still further, Fraenkel does not teach or disclose the insertion by a client of correlation tags into data of both networking and application layers. The networking layer of Claim 1 relates to, for example, performance data for each TCP connection;<sup>10</sup> a correlation tag is placed in the networking layer data. The application layer of Claim 1 relates to, for example, a web log of a web server contains one entry for each HTTP request made by a client;<sup>11</sup> a correlation tag is placed in the application layer data.

Still further, Claim 1 of the present application measures the response time of a web server; Fraenkel measures transaction response time, i.e. the time taken for the application to complete a defined transaction or business process.

Claim 1 recites collecting the data, which corresponds to a single event, from the layers, and combining the data from the networking and application layers into a metric. After this

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<sup>6</sup> See Fraenkel, at Abstract.

<sup>7</sup> See Fraenkel, at paragraph [0119].

<sup>8</sup> See Fraenkel, at Abstract and FIG. 1.

<sup>9</sup> See Fraenkel, at FIG 1 and its description.

<sup>10</sup> See Specification, at page 7, lines 17-26.

<sup>11</sup> See Specification, at page 9, lines 8-17.

combination, Claim 1 calculates a client perceived response time of the web server. The present application provides a model for a page view download that is performed at the server side; Fraenkel does not teach or disclose any page view download model performed at the server side.

Accordingly, Fraenkel does not teach or suggest the features as recited by Claim 1. Since Fraenkel does not teach or disclose each and every limitation of Claim 1 of the present application, Claim 1 cannot be anticipated by Fraenkel.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 1 under 35 U.S.C. §102(b) must be reversed.

**1B. Independent Claim 1 is not anticipated by Fraenkel**

The Examiner has failed to show that each and every element of Claim 1, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facie case for an anticipation rejection, and thus Claim 1 is allowable.

**1C. Dependent Claims 2-3 are patentable over Fraenkel**

Without conceding the patentability per se of dependent Claims 2-3, these claims are likewise believed to be allowable by virtue of at least their dependence on Claim 1.

**2. Independent Claim 4 is patentable over Fraenkel**

Independent Claim 4 was said to be anticipated by Fraenkel.<sup>12</sup>

Claim 4 recites a method of estimating of a perceived response time of at least one web server computing device to one or more client computing devices connected to the at least one web server device via a network. The method includes generating and placing a session identifier (ID) as a correlation tag in each of a plurality of requests sent by a client to a web server device, the correlation tags identify said requests. The method further includes generating and placing a connection identifier (ID) as a correlation tag in each communication packet sent between the client and the web server device. The method still further includes combining said plurality of requests and said communication packets into a metric, each request and communication packet

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<sup>12</sup> See Office Action dated December 20, 2007, at page 2, paragraph no. 3.

corresponding to a single event is identified. The method also includes estimating client perceived response time of said at least one web server computing device to a request by said one or more client computing devices connected to the web server device via a network.

Fraenkel discloses a root cause analysis of server system performance degradations.<sup>13</sup>

#### 2A. Fraenkel cannot anticipate Claim 4

Claim 4 of the present application relates to a web server side mechanism for measuring the response time of the web server, as perceived by one or more client computing devices. The claim relates to measuring/estimating the response time, as perceived by the client computing devices, using only server side latency measurements. Further, the claim relates to measuring/estimating the response time of a page download, which can consist of a container page and a set of embedded objects, obtained over multiple simultaneous TCP/IP connections, which is achieved using only server side mechanisms. The claim also relates to using correlation tags to aid in correlating application level latencies with TCP/IP network level latencies.

Claim 4 of the present application recites generating and placing a session ID as a correlation tag in each request sent by a client to a web server device, the session ID is used to identify said requests, and generating and placing a connection ID as a correlation tag in each communication packet sent between the client and the web server device. Claim 4 of the present application recites combining said plurality of requests and said communication packets into a metric, wherein said each request and communication packet corresponding to a single event is identified. Claim 4 of the present application combines both the application layer information, using a correlation tag in each of a plurality of requests, and the networking layer information, using a correlation tag in each communication packet, which provides for a more comprehensive analysis. Claim 4 of the present application uses the correlation tags to identify a single web event. The single web event data that is identified is then used by the metric to generate comprehensive and real time user perceived response times that correspond to the single web event.

Fraenkel discloses a root cause analysis of server system performance degradations. The system disclosed by Fraenkel is a mechanism for measuring the transaction response time at a set

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<sup>13</sup> See Fraenkel, at title and abstract.



of remote monitoring agents;<sup>14</sup> the remote monitoring agents are not actual clients.<sup>15</sup> Fraenkel determines root cause analysis from latency measurements collected by remote monitoring agents and server side utilization measurements.<sup>16</sup> Fraenkel does not teach or disclose page view response time, embedded objects, or simultaneous TCP connections; Fraenkel only discloses transaction response time. Fraenkel does not teach or disclose tagging, at either the systems/network level or application level.

Claim 4 recites a method of estimating of a perceived response time of at least one web server computing device. The measurements of the invention of Claim 4 are based only upon server side measurements; that is, the data is tagged, and the web server collects the tagged data. Fraenkel uses measurements performed at an agent side.<sup>17</sup> Server side measurements are not and cannot be equated with agent side measurements. Fraenkel uses measurements performed at the agents.<sup>18</sup>

In addition, Claim 4 of the present application measures response time for actual clients; Fraenkel measures response time for monitoring agents.<sup>19</sup> By placing a session identifier (ID) in each of the requests sent by a client to a web server, placing a connection identifier (ID) as a correlation tag in each communication packet sent between the client and the web server device, and sending these IDs to the server device, that server device can estimate the client perceived response time of the web server computing device to the request. The IDs of Claim 4 are sent directly between the client and server; in Fraenkel, its data is transmitted between agents and servers.<sup>20</sup> Still further, Fraenkel does not teach or disclose correlation tags in both session IDs and connection IDs as recited in Claim 4 of the present application.

Still further, Claim 4 of the present application measures page view response time of a web server at the web server; Fraenkel measures transaction response time, i.e. the time taken for the application to complete a defined transaction or business process.

Claim 4 recites that the plurality of requests and communication packets are combined

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<sup>14</sup> See Fraenkel, at Abstract, FIG. 1 and paragraph [0073].

<sup>15</sup> See Fraenkel, at paragraph [0073].

<sup>16</sup> See Fraenkel, at Abstract.

<sup>17</sup> See Fraenkel, at paragraph [0119].

<sup>18</sup> See Fraenkel, at paragraph [0119].

<sup>19</sup> See Fraenkel, at Abstract and FIG. 1.

<sup>20</sup> See Fraenkel, at FIG 1 and its description.

into a metric, each request and communication packet corresponding to a single event is identified. After this combination, Claim 4 estimates a client perceived response time of the web server computing device to a request by the client computing device connected to the web server device via a network. The present application provides a model for a page view downloads that is performed at the server side; Fraenkel does not teach or disclose any page view download model performed at the server side.

Accordingly, Fraenkel does not teach or suggest the features as recited by Claim 4. Since Fraenkel does not teach or disclose each and every limitation of Claim 4 of the present application, Claim 4 cannot be anticipated by Fraenkel.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 4 under 35 U.S.C. §102(b) must be reversed.

**2B. Independent Claim 4 is not anticipated by Fraenkel**

The Examiner has failed to show that each and every element of Claim 4, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facie case for an anticipation rejection, and thus Claim 4 is allowable.

**2C. Dependent Claims 5-10 are patentable over Fraenkel**

Without conceding the patentability per se of dependent Claims 5-10, these claims are likewise believed to be allowable by virtue of at least their dependence on Claim 4.

**3. Independent Claim 12 is patentable over Fraenkel**

Independent Claim 12 was said to be anticipated by Fraenkel.<sup>21</sup>

Claim 12 recites an apparatus for estimating a perceived client response time of at least one web server computing device to one or more client computing devices connected to the at least one web server via a network. The apparatus includes a means for generating and placing a session identifier (ID) as a correlation tag in each of a plurality of requests sent by the one or more client computing devices to the at least one web server, the correlation tags identify said

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<sup>21</sup> See Office Action dated December 20, 2007, at page 2, paragraph no. 3.

requests. The apparatus further includes a means for generating and placing a connection identifier (ID) as a correlation tag in each communication packet sent between the one or more client computing devices and the at least one web server. The apparatus still further includes a means for combining said plurality of requests and said communication packets into a metric, each request and communication packet corresponding to a single event is identified. The apparatus also includes a means for estimating the perceived client response time of the at least one web server computing device to a request by the one or more client computing devices connected to the web server via the network.

Fraenkel discloses a root cause analysis of server system performance degradations.<sup>22</sup>

### 3A. Fraenkel cannot anticipate Claim 12

Claim 12 of the present application relates to a web server side mechanism for measuring the response time of the web server, as perceived by one or more client computing devices. The claim relates to measuring/estimating the response time, as perceived by the client computing devices, using only server side latency measurements. Further, the claim relates to measuring/estimating the response time of a page download, which can consist of a container page and a set of embedded objects, obtained over multiple simultaneous TCP/IP connections, which is achieved using only server side mechanisms. The claim also relates to using correlation tags to aid in correlating application level latencies with TCP/IP network level latencies.

Claim 12 of the present application recites means for generating and placing a session ID as a correlation tag in each request sent by a client to a web server device, the session ID is used to identify said requests, and generating and placing a connection ID as a correlation tag in each communication packet sent between the client and the web server device. Claim 12 of the present application recites means for combining said plurality of requests and said communication packets into a metric, wherein said each request and communication packet corresponding to a single event is identified. Claim 12 of the present application combines both the application layer information, using a correlation tag in each of a plurality of requests, and the networking layer information, using a correlation tag in each communication packet, which provides for a more comprehensive analysis. Claim 12 of the present application uses the correlation tags to identify

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<sup>22</sup> See Fraenkel, at title and abstract.

a single web event. The single web event data that is identified is then used by the metric to generate comprehensive and real time user perceived response times that correspond to the single web event.

Fraenkel discloses a root cause analysis of server system performance degradations. The system disclosed by Fraenkel is a mechanism for measuring the transaction response time at a set of remote monitoring agents;<sup>23</sup> the remote monitoring agents are not actual clients.<sup>24</sup> Fraenkel determines root cause analysis from latency measurements collected by remote monitoring agents and server side utilization measurements.<sup>25</sup> Fraenkel does not teach or disclose page view response time, embedded objects, or simultaneous TCP connections; Fraenkel only discloses transaction response time. Fraenkel does not teach or disclose tagging, at either the systems/network level or application level.

Claim 12 recites a method of estimating of a perceived response time of at least one web server computing device. The measurements of the invention of Claim 12 are based only upon server side measurements; that is, the data is tagged, and the web server collects the tagged data. Fraenkel uses measurements performed at an agent side.<sup>26</sup> Server side measurements are not and cannot be equated with agent side measurements. Fraenkel uses measurements performed at the agents.<sup>27</sup>

In addition, Claim 12 of the present application measures response time for actual clients; Fraenkel measures response time for monitoring agents.<sup>28</sup> By placing a session identifier (ID) in each of the requests sent by a client to a web server, placing a connection identifier (ID) as a correlation tag in each communication packet sent between the client and the web server device, and sending these IDs to the server device, that server device can estimate the client perceived response time of the web server computing device to the request. The IDs of Claim 12 are sent directly between the client and server; in Fraenkel, its data is transmitted between agents and servers.<sup>29</sup> Still further, Fraenkel does not teach or disclose correlation tags in both session IDs

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<sup>23</sup> See Fraenkel, at Abstract, FIG. 1 and paragraph [0073].

<sup>24</sup> See Fraenkel, at paragraph [0073].

<sup>25</sup> See Fraenkel, at Abstract.

<sup>26</sup> See Fraenkel, at paragraph [0119].

<sup>27</sup> See Fraenkel, at paragraph [0119].

<sup>28</sup> See Fraenkel, at Abstract and FIG. 1.

<sup>29</sup> See Fraenkel, at FIG 1 and its description.

and connection IDs as recited in Claim 12 of the present application.

Still further, Claim 12 of the present application measures page view response time of a web server at the web server; Fraenkel measures transaction response time, i.e. the time taken for the application to complete a defined transaction or business process.

Claim 12 recites that the plurality of requests and communication packets are combined into a metric, each request and communication packet corresponding to a single event is identified. After this combination, Claim 12 estimates a client perceived response time of the web server computing device to a request by the client computing device connected to the web server device via a network. The present application provides a model for a page view downloads that is performed at the server side; Fraenkel does not teach or disclose any page view download model performed at the server side.

Accordingly, Fraenkel does not teach or suggest the features as recited by Claim 12. Since Fraenkel does not teach or disclose each and every limitation of Claim 12 of the present application, Claim 12 cannot be anticipated by Fraenkel.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 12 under 35 U.S.C. §102(b) must be reversed.

### 3B. Independent Claim 12 is not anticipated by Fraenkel

The Examiner has failed to show that each and every element of Claim 12, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facie case for an anticipation rejection, and thus Claim 12 is allowable.

### 4. Independent Claim 13 is patentable over Fraenkel

Independent Claim 13 was said to be anticipated by Fraenkel.<sup>30</sup>

Claim 13 recites a computer program device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for an apparatus for estimating a perceived client response time of at least one web server computing device to one or more client computing devices connected to the at least one web server via a network. The

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<sup>30</sup> See Office Action dated December 20, 2007, at page 2, paragraph no. 3.

computer program device includes a means for generating and placing a session identifier (ID) as a correlation tag in each of a plurality of requests sent by the one or more client computing devices to the at least one web server, the correlation tags identify said requests. The computer program device further includes a means for generating and placing a connection identifier (ID) as a correlation tag in each communication packet sent between the one or more client computing devices and the at least one web server. The computer program device still further includes a means for combining said plurality of requests and said communication packets into a metric, wherein said each request and communication packet corresponding to a single event is identified. The computer program device also includes a means for estimating the perceived client response time of the at least one web server computing device to a request by the one or more client computing devices connected to the web server via the network.

Fraenkel discloses a root cause analysis of server system performance degradations.<sup>31</sup>

#### 4A. Fraenkel cannot anticipate Claim 13

Claim 13 of the present application relates to a computer program device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for an apparatus for estimating a perceived client response time of at least one web server computing device to one or more client computing devices connected to the at least one web server via a network, a web server side mechanism for measuring the response time of the web server, as perceived by one or more client computing devices. The claim relates to measuring/estimating the response time, as perceived by the client computing devices, using only server side latency measurements. Further, the claim relates to measuring/estimating the response time of a page download, which can consist of a container page and a set of embedded objects, obtained over multiple simultaneous TCP/IP connections, which is achieved using only server side mechanisms. The claim also relates to using correlation tags to aid in correlating application level latencies with TCP/IP network level latencies.

Claim 13 of the present application recites means for generating and placing a session ID as a correlation tag in each request sent by a client to a web server device, the session ID is used to identify said requests, and generating and placing a connection ID as a correlation tag in each

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<sup>31</sup> See Fraenkel, at title and abstract.

communication packet sent between the client and the web server device. Claim 13 of the present application recites means for combining said plurality of requests and said communication packets into a metric, wherein said each request and communication packet corresponding to a single event is identified. Claim 13 of the present application combines both the application layer information, using a correlation tag in each of a plurality of requests, and the networking layer information, using a correlation tag in each communication packet, which provides for a more comprehensive analysis. Claim 13 of the present application uses the correlation tags to identify a single web event. The single web event data that is identified is then used by the metric to generate comprehensive and real time user perceived response times that correspond to the single web event.

Fraenkel discloses a root cause analysis of server system performance degradations. The system disclosed by Fraenkel is a mechanism for measuring the transaction response time at a set of remote monitoring agents;<sup>32</sup> the remote monitoring agents are not actual clients.<sup>33</sup> Fraenkel determines root cause analysis from latency measurements collected by remote monitoring agents and server side utilization measurements.<sup>34</sup> Fraenkel does not teach or disclose page view response time, embedded objects, or simultaneous TCP connections; Fraenkel only discloses transaction response time. Fraenkel does not teach or disclose tagging, at either the systems/network level or application level.

Claim 13 recites a method of estimating of a perceived response time of at least one web server computing device. The measurements of the invention of Claim 13 are based only upon server side measurements; that is, the data is tagged, and the web server collects the tagged data. Fraenkel uses measurements performed at an agent side.<sup>35</sup> Server side measurements are not and cannot be equated with agent side measurements. Fraenkel uses measurements performed at the agents.<sup>36</sup>

In addition, Claim 13 of the present application measures response time for actual clients; Fraenkel measures response time for monitoring agents.<sup>37</sup> By placing a session identifier (ID) in

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<sup>32</sup> See Fraenkel, at Abstract, FIG. 1 and paragraph [0073].

<sup>33</sup> See Fraenkel, at paragraph [0073].

<sup>34</sup> See Fraenkel, at Abstract.

<sup>35</sup> See Fraenkel, at paragraph [0119].

<sup>36</sup> See Fraenkel, at paragraph [0119].

<sup>37</sup> See Fraenkel, at Abstract and FIG. 1.

each of the requests sent by a client to a web server, placing a connection identifier (ID) as a correlation tag in each communication packet sent between the client and the web server device, and sending these IDs to the server device, that server device can estimate the client perceived response time of the web server computing device to the request. The IDs of Claim 13 are sent directly between the client and server; in Fraenkel, its data is transmitted between agents and servers.<sup>38</sup> Still further, Fraenkel does not teach or disclose correlation tags in both session IDs and connection IDs as recited in Claim 13 of the present application.

Still further, Claim 13 of the present application measures page view response time of a web server at the web server; Fraenkel measures transaction response time, i.e. the time taken for the application to complete a defined transaction or business process.

Claim 13 recites that the plurality of requests and communication packets are combined into a metric, each request and communication packet corresponding to a single event is identified. After this combination, Claim 13 estimates a client perceived response time of the web server computing device to a request by the client computing device connected to the web server device via a network. The present application provides a model for a page view downloads that is performed at the server side; Fraenkel does not teach or disclose any page view download model performed at the server side.

Accordingly, Fraenkel does not teach or suggest the features as recited by Claim 13. Since Fraenkel does not teach or disclose each and every limitation of Claim 13 of the present application, Claim 13 cannot be anticipated by Fraenkel.

Based on at least the foregoing it is respectfully submitted that the rejection of Claim 13 under 35 U.S.C. §102(b) must be reversed.

**4B. Independent Claim 13 is not anticipated by Fraenkel**

The Examiner has failed to show that each and every element of Claim 13, and in as complete detail as is contained therein, are taught in or suggested by the prior art. The Examiner has failed to make out a prima facie case for an anticipation rejection, and thus Claim 13 is allowable.

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<sup>38</sup> See Fraenkel, at FIG 1 and its description.



### CONCLUSION

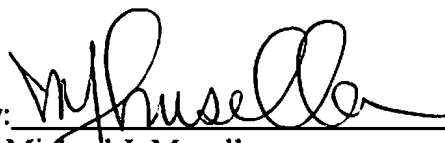
As the Examiner has failed to make out a prima facie case for an anticipation rejection, the rejection of Claims 1-10, 12 and 13 must be reversed.

It is well settled that "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also M.P.E.P. §2131.

The Examiner has failed to show that each and every element of Claims 1-10, 12 and 13 are found in Fraenkel. Accordingly, the Examiner has failed to make out a prima facie case for an anticipation rejection.

Independent Claims 1, 4, 12 and 13 are not anticipated by Fraenkel. Therefore, the rejections of Claims 1-10, 12 and 13 must be reversed.

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## **CLAIMS APPENDIX**

1. (Previously Presented) A method of computing response time of a web server, comprising the steps of:

placing a plurality of correlation tags in data at networking and application layers, wherein said tags allow for later identification of said data;

collecting said data from said layers, wherein said data corresponds to a single event;

combining said data from said networking and application layers into a metric, wherein said data corresponding to a single web event is identified; and

calculating client perceived response time.

2. (Original) The method of claim 1, wherein said event is selected from one of a web page download and a web session.

3. (Original) The method of claim 1, wherein said calculating step is performed using analytical models of response time.

4. (Previously Presented) A method of estimating of a perceived response time of at least one web server computing device to one or more client computing devices connected to the at least one web server device via a network, the method comprising the steps of:

generating and placing a session identifier (ID) as a correlation tag in each of a plurality of requests sent by a client to a web server device, wherein said correlation tags identify said requests;

generating and placing a connection identifier (ID) as a correlation tag in each communication packet sent between the client and the web server device;

combining said plurality of requests and said communication packets into a metric, wherein said each request and communication packet corresponding to a single event is identified; and

estimating client perceived response time of said at least one web server computing device to a request by said one or more client computing devices connected to the web server

device via a network.

5. (Original) The method of claim 4, wherein the network is the Internet.

6. (Original) The method of claim 4, wherein said step of generating and placing the session ID further comprises a step of establishing a web session between the client and the web server device.

7. (Original) The method of claim 4, further comprising a step of logging each web session between the client and the web server device.

8. (Previously Presented) The method of claim 4, wherein said step of generating and placing said connection ID further comprises a step of establishing a network connection between the client and the web server device.

9. (Original) The method of claim 4, further comprising a step of logging said each communication packet sent between the client and the web server.

10. (Original) The method of claim 4, further comprising a step of grouping all of said plurality of requests and said communication packets corresponding to a single event.

11. (Original) The method of claim 4, wherein said estimating step further comprises the steps of

- a) retrieving a page composition vector and TCP/IP round trip time (RTT), packet loss rate, and average connection time  $T_c$ ;
- b) calculating time  $T1 = T_c + C1(b1)$  and time  $T2 = C1(o) + T_c + C2(b2)$  and setting a loop counter;
- c) averaging  $T1$  and  $T2$  by  $(T1 + T2)/2$  and terminating processing if the loop counter is less than or equal to the value  $n$ ;  
otherwise, if  $T1$  is smaller than  $T2$ ,  $T1$  is set to  $T1 + (RTT/2) + C1(BI)$ , and

if  $T1$  is not smaller than  $T2$ ,  $T2$  is set to  $T2 + (RTT/2) + C2(BI)$ ; and

d) incrementing the loop counter and repeating step c,

wherein the page composition vector is composed of  $\{b_1, b_2, \dots, b_n\}$  and  $o$ ,

$b_i$ , where  $i$  is an number  $1, 2, \dots$ , being the size of the  $i$ -th component of the web page,

$n$  being the number of components,

$o$  being the offset at which first component is embedded in a container page,

$C1(y)$  being the time it takes to download  $y$  bytes on a first TCP/IP connection between the client and the web server device, and

$C2(y)$  being the time it takes to download  $y$  bytes on a second TCP/IP connection between the client and web server device.

12. (Previously Presented) An apparatus for estimating a perceived client response time of at least one web server computing device to one or more client computing devices connected to the at least one web server via a network, the method comprising:

a means for generating and placing a session identifier (ID) as a correlation tag in each of a plurality of requests sent by the one or more client computing devices to the at least one web server, wherein said correlation tags identify said requests;

a means for generating and placing a connection identifier (ID) as a correlation tag in each communication packet sent between the one or more client computing devices and the at least one web server;

a means for combining said plurality of requests and said communication packets into a metric, wherein said each request and communication packet corresponding to a single event is identified; and

a means for estimating the perceived client response time of the at least one web server computing device to a request by the one or more client computing devices connected to the web server via the network.

13. (Previously Presented) A computer program device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for an

apparatus for estimating a perceived client response time of at least one web server computing device to one or more client computing devices connected to the at least one web server via a network, the method comprising:

- a means for generating and placing a session identifier (ID) as a correlation tag in each of a plurality of requests sent by the one or more client computing devices to the at least one web server, wherein said correlation tags identify said requests;

- a means for generating and placing a connection identifier (ID) as a correlation tag in each communication packet sent between the one or more client computing devices and the at least one web server;

- a means for combining said plurality of requests and said communication packets into a metric, wherein said each request and communication packet corresponding to a single event is identified; and

- a means for estimating the perceived client response time of the at least one web server computing device to a request by the one or more client computing devices connected to the web server via the network.

## **EVIDENCE APPENDIX**

There is no evidence submitted pursuant to 37 C.F.R. 1.130, 1.131, 1.132 or entered by the Examiner and relied upon by Appellant.

## **RELATED PROCEEDINGS APPENDIX**

There are no known decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. 41.37.